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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/521,937	01/24/2005	Gregory Alan Steube	S-8494 (1502-88 PCT US)	2176

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EXAMINER

BERMAN, SUSAN W

ART UNIT	PAPER NUMBER
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1711

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/12/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/521,937

Applicant(s)

STEUBE, GREGORY ALAN

Examiner

Susan W. Berman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 5/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

Specification

The disclosure is objected to because of the following informalities: the disclosure on page 8 states that various silanes and silicone chloride are “polydimethylsiloxanes”. However, none of these silanes is a polysiloxane, which, by definition, contains $-(\text{Si-O-Si-O-Si-O})_n$ - kinds of linkages. Thus the disclosure does not make it clear whether applicant is disclosing the silanes as the secondary silicone component or polydimethylsiloxanes having organo-functional groups obtained by polymerizing the silanes disclosed to obtain a polysiloxane as the secondary silicone component.

Appropriate correction is required.

Claim Objections

Claims 5, 13 and 19 are objected to because of the following informalities: The recitation “diaryliodonium, tetrakis(pentafluorophenyl)borate salt” should read “diaryliodonium tetrakis(pentafluorophenyl)borate salt”. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is not clear what kind of “silicone-epoxy copolymer” is intended to be claimed. Does applicant intend to claim a copolymer of a silicone monomer and an epoxy monomer? Does applicant intend to claim a silicone copolymer having epoxy pendant or end functional groups?

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It is not clear how the “secondary silicone component” differs from the “silicone-epoxy copolymer”. The second silicone is not clearly differentiated from the silicone-epoxy because it could also be a silicone epoxy of a different structure.

In claim 1, it is not clear whether applicant intends to claim a lubricant that is a cured product of the components set forth in claim 1 or to claim a composition comprising the components for providing a lubricant for medical devices. The claim should clearly recite either a cured product that is a lubricant for medical devices or a curable composition for providing a lubricant for medical devices when cured.

In claim 3, 11 and 17, the kinds of vinyl ethers being claimed are not clearly set forth. What is meant by a “monovinyl ether of 2-ethyl-1-hexanol, monovinyl ether”? Is this compound a monovinyl ether of a different monovinyl ether? What is the structure? It is suggested that the next recitations should read “divinyl ether of n-dodecanol”, “divinyl ether of 1,4-cyclohexanedimethanol”. It is not clear what the structure of “)H-stopped poly(tetrahydrofuran” is. Specifically, where are the vinyl ether groups in this vinyl ether and what does “)H” denote ?

In claims 6, 14, 21 and 22, it is not clear what materials are encompassed by “silicone chloride”. It is not clear what the structure of “vinyl trimethoryl silane” is. What is a ‘methoryl’ group? Does applicant intend “methoxy”? What structure is intended by “organosilane ester tri(3-(trimethoxysilyl)propyl)isocyanurate”? It is suggested that applicant intends to recite tri(3-(trimethoxysilyl)propyl)isocyanurate, which is the name of the organosilane ester of isocyanurate.

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In claim 7, Does applicant intend to set forth a property of the copolymer (or the composition comprising the copolymer?) ? If so, the claim should recite "copolymer is curable by". Does applicant intend to set forth a lubricant that is a cured product of the composition set forth in claim 1? Is only the copolymer cured by exposure to radiation?

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Leir et al (5,576,356). Leir et al disclose cationically co-curable polysiloxane release compositions comprising an epoxy-functional polysiloxane (a) and a co-reactive monomer (b) with an cationic photocatalyst. Vinyl ether reactive diluents including species in instant claim 3 are taught in column 7, lines 25-27 and column 11. Iodonium salts including species in instant claim 5 are taught in column 7, lines 60-66. Coating and radiation curing is taught in column 8, lines 50-64. Examples 31 and 32 teach mixtures of epoxy silicone with mercapto-functional silicone, vinyl ethers and iodonium salt. Leir et al teach that the compositions provide release coatings so they would be expected to provide a lubricant for medical devices.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Leir et al (5,576,356), as applied to claims 1-5 and 7 above, further in view of Bilodeau (6,486,267). Leir et al do not teach adding another silicone component. Bilodeau teaches release compositions wherein the compound (A) can be a epoxy silicone and B is a curable organopolysiloxane, such as polydimethylsiloxane (column 3, line 26, to column 4, line 13).

It would have been obvious to one skilled in the art at the time of the invention to substitute the mixture of an organopolysiloxane and an epoxy silicone taught by Bilodeau for the siloxane having epoxy functionality in the analogous radiation curable compositions disclosed by Leir et al. One of ordinary skill in the art at the time of the invention would have been motivated by a reasonable expectation of providing useful coating compositions having release properties, as taught by Leir et al and by Bilodeau, in the absence of evidence to the contrary.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Leir et al (5,576,356), as applied to claims 1-5 and 7 above, further in view of Shepard et al (5,260,348). Leir et al do not teach adding another silicone component. Shepard et al disclose compositions comprising a silanol chain-stopped polydiorganosiloxane, an acyloxy, alkoxy or aryloxy-functional crosslinking agent and an onium salt. Iodonium salts are disclosed in column 4, lines 5-11. Crosslinking silanes are taught in column 3, lines 17-40. Polydiorganosiloxane plasticizers are taught in column 5, lines 24-62. Silane adhesion promoters, including alkoxysilanes and bis-1,3- trimethoxysilylpropyl- isocyanurate are taught (column 6, line 50, to column 7, line 25).

It would have been obvious to one skilled in the art at the time of the invention to include an additional organopolysiloxane or adhesion promoting silane taught by Shepard et al in the

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analogous radiation curable compositions disclosed by Leir et al. One of ordinary skill in the art at the time of the invention would have been motivated by a reasonable expectation of providing useful coating compositions having release properties, as taught by Leir et al, in the absence of evidence to the contrary.

Allowable Subject Matter

Claims 8 and 16 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Claims 9-15 and 17-22 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Spielvogel et al (4,720,521) is the closest prior art known to the examiner. Spielvogel et al disclose silicone compositions having lubricating properties for coating hypodermic needles. Three reactive silicones comprising vinyl-functionality and hydrogen functionality form a crosslinked matrix for a non-reactive silicone that provides lubricity. Spielvogel et al teach that polydimethylsiloxane is a well known silicone lubricant (column 1, lines 52-63). . Epoxysilicones are not mentioned. The examiner has not noted any motivation to substitute the compositions taught by Leir et al for those disclosed by Spielvogel et al.

Applicant disclose in the "Background of the Invention" that coatings comprising polydimethylsiloxane and moisture curable amino-functional silicone dispersions are known in the art for coating hypodermic needles.

Conclusion

The following references are cited as art of interest.

Kline (6,022,050) discloses silicone release coating compositions. The compositions comprise an epoxy functional silicone, a reactive solvent, a reactive diluent, such as a vinyl ether, a wax-treated silica powder and a photoinitiator. Vinyl ether reactive diluents, such as divinyl ether of 1,4-cyclohexane dimethanol, and onium salts, such as bis(4-dodecylphenyl) iodonium salts, are taught in column 5, lines 54-67, and column 7, line 30, to column 8, line 31. Kline does not specifically teach adding a second silicone, but does teach adding flow agents, surface active agents or extending oils, among others (column 8, lines 53-60). Kline teaches applying the compositions to a substrate and UV curing (column 9, lines 49-64).

Eckberg et al (5,650,453) disclose UV curable compositions comprising blends of epoxysilicone polymer, vinyl ether monomer or oligomers and an iodonium photocatalyst. Eckberg et al teach coating cellulosic or plastic film substrates and UV curing (column 5, lines 20-28). Eckberg et al do not teach adding a second silicone component.

Shipp, Jr. (6,787,490, filed 12-26-2001) discloses a lubricating donning agent compositions comprising mixtures of reactive and non-reactive silicones, such as polydimethylsiloxane and a polyether epoxy silicone (column 8, lines 4-14). Shipp, Jr. does not suggest compositions comprising a vinyl ether compound or a photoinitiator.

Greene (6,344,520) discloses addition crosslinkable epoxy-functional organopolysiloxane compositions comprising an aminosilane hardener. See column 7, lines 6-53, and the Examples. Greene teaches that the preferred aminosilanes provide coatings having superior weatherability

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in terms of color and gloss retention. Addition of silicone flow agents is taught in column 8, lines 3-5. Photoinitiators and radiation curing are not mentioned.


Neither EP 1 004 612 nor EP 1 083 205, cited in the international Search Report, discloses epoxy silicone compositions.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susan W. Berman whose telephone number is 571 272 1067. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 571 272 1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SB
3/3/07


Susan W Berman
Primary Examiner
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